

An alternative form, however, is the cylindrical form. It is observed that the hollow in the hollow foldable arm may comprise only a recess for the cable.

[0012] In a further embodiment the elastic portion is a spring which is located in the cable between the suspension point and the first hinging point. It is therefore advantageous because a spring having a desired elasticity can be selected. The connection between the spring and the cable is realized, for example, by winding the cable around an end of the spring, whereas the other end of the spring is fixed to the point of suspension. Thanks to the use of a cable in the arm, the spring need not of necessity be a continuation of the arm. This offers a greater freedom of design of the device.

[0013] Another embodiment comprises locking means by which the display can be locked in at least one position. A first advantageous example of such locking means is a rotary disk by which a user can lock the display in a first position. Such a rotary disk is preferably located inside the housing, part of the edge of the rotary disk protruding through a slot-like opening in the housing. Such a rotary disk is particularly advantageous in combination with the spring as an elastic portion of the cable. The point of suspension of the cable is then located on the rotary disk, that is, at an eccentric point thereof. The spring which in first position is in extended state, is brought to a less extended or non-extended state by the rotation of the rotary disk. There is then no driving force for the extending. When at the same time there is a driving force for rolling up the display, the display will roll up by itself. Another advantageous embodiment of a locking means is an operating means such as a key or a function in a menu on a further display in the display device. This operating means can be connected with the same mechanism with a rotary disk, or another mechanism to reduce or enlarge the force on the spring or the cable. Another embodiment hereof utilizes an electric motor. It is an example of the use of an electronic control means that the use of the rollable display can be controlled by means of an identification code.

[0014] In another embodiment the rotary disk has a non-uniform diameter. A first example of this is a rotary disk having the form of an ellipse around which the cable is wound. This may provide that the forces of pulling out and rolling up the display are balanced over the entire rolling width of the display. This provides that the display can be rolled out over the entire width in a simple manner. A second example of this is a rotary disk with one or more local bulges along the edge of the rotary disk. Such a local variation of the radii of the rotary disk creates intermediate positions.

[0015] In a further embodiment reading means are available to determine to what degree the display in second position is extended. Furthermore, driving means are present with which an image can be reproduced only on the visible part of the display once the degree of extension of the display has been determined. This embodiment is pre-eminently suitable when the display can be present also in different positions from the first and second positions. This leads to the fact that not the entire display needs to be rolled out if one wishes to obtain certain information. This is advantageous in the case where a user does not have room for completely pulling out the display—such as, for example on a train. This is furthermore advantageous when the user wishes to rest the display on a hand and see only a few data.

The reading means comprise, for example, one or more light sensors which are located on or near the rotary disk (if available). The position of the rotary disk then determines the incidence of light on each of the sensors. The reading means may also be coupled to a gear wheel, for example, in an electric motor. It will be evident that many variations are possible with this. The driving means are particularly a driving circuit which is available in each display device anyhow. The driving circuit is then programmed such that it adjusts the image format and stretches the information to be represented to this format in dependence on the signal from the reading means.

[0016] In a further variant a flexible display is subdivided into a number of segments oriented in parallel with the axis, in which each of the segments has a carrier layer. The presence of such a carrier layer is advantageous in that it provides an improved support of the display in extended state. The carrier layer is preferably available on the side of the display facing the user. In this embodiment the carrier layer is transparent. The advantage of this is that the display can better withstand local pressure. This is particularly favorable when the display has a what is called a touch-screen functionality. With this functionality a user can, by touching the display, call up a functionality of the display device or an appliance co-operating therewith. Such a touch-screen functionality is known to the expert.

[0017] The flexible display may be of the AWD type as described in US2002/0070910. However, the flexible display preferably has flexible transistors on which an electro-optical layer is deposited. Advantageous results are obtained with an electrophoretic electro-optical layer and with flexible transistors of a semiconductor material that has a chain-like molecular structure. Examples of this are semi-conducting hardwires and organic semiconductors which are known per se to the expert in this field.

[0018] The display device may further comprise means for signal transmission to an adjustable external appliance. These means are, for example, the antenna, amplifier, transceiver and further component parts of a mobile telephone with which signal transmission according to a desired protocol (GSM, CDMA, W-CDMA, Bluetooth, W-Lan) can be realized. Alternatively, they may also be a connection for a cable by which the display device can be coupled to a computer or a computer network or a telecommunication network.

[0019] The display device may further advantageously be applied in combination with an electronic appliance. The display device may then be set up separately with signals being transmitted by wire or in wireless fashion between the electronic appliance and the display device. The display device may also be releasably attached to the electronic appliance. Examples of electronic appliances comprise mobile telephones and computers. An advantageous application is also the use for video conferencing or meetings with a large number of people. Such a combination is described inter alia in the non-prepublished application EP 02079131.5 (PHNL020942). This application further explains where a driving unit may be located.

[0020] These and other aspects of the invention are apparent from and will be elucidated with reference to the embodiments described hereinafter.